ABSTRACT OF DISCLOSURE

Established cells derived from retinal capillary endothelial cells, choroid plexus epithelial cells, or brain capillary endothelial cells or a transgenic animal carrying a large T-antigen gene of an SV40 temperature sensitive mutant tsA58. The cell line derived from retinal capillary endothelial cells expresses a temperature sensitive SV40 large T-antigen, GLUT-1 transporter, and p-glycoprotein. The cell line derived from choroid plexus epithelial cells expresses a temperature sensitive SV40 large T-antigen gene and shows localization of Na^+ -K^+ ATPase and GLUT-1 transporter in the cell membrane. When cultured in a monolayer, it shows the localization of Na^+ -K^+ ATPase in the apical side. The cell line derived from brain capillary endothelial cells expresses a temperature sensitive SV40 large T-antigen, GLUT-1 transporter, p-glycoprotein, alkaline phosphatase, and γ- glutamyltransferase.

A method of establishing immortalized cells by subculturing cells obtained from retinal capillary endothelial cells, choroid plexus epithelial cells, or brain capillary endothelial cells of the above-described transgenic animal. These cells are useful in screening drugs regarding safety and efficacy thereof, and developing method for diagnosing and treating diseases relating to nutrition metabolism in retinal tissues and brain on cellular level studies.